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SOURCE Paris

FRENCH WRITER'S SURVEY OF USSR NUCLEAR RESEARCH AND DEVELOPMENT

/Comment: On 25 September and 2 October 1953, the Casablanca weekly newspaper Paris published a survey of atomic-energy and related developments in the USSR, written by Jacques Aubonne and copyrighted by Aubonne and by the French press service Presse Francaise et Internationale. The survey was also published, without the introductory portion but with two paragraphs not found in the Paris version, by the Abidjan semiweekly newspaper La Cote d'Ivoire in six consecutive issues from 14 August to 1 September 1953.

A summary of the Paris version, supplemented from La Cote d'Ivoire, follows. It will be noted that there are a number of apparent inaccuracies in the survey./

The Yerevan Supercyclotron

At an altitude of 1,900 meters in the area around Lake Yerevan in the Transcaucasus, only 90 kilometers as the crow flies from Julfa, Iran, are the USSR atomic installations closest to the Western world. I made a clandestine visit to Julfa during a recent trip to Iran. Access to the little town, separated from Soviet Dahul'fa by the 45-meter wide Araks River, is forbidden to Europeans and Iranians. Only supply convoys are permitted within 10 kilometers of the border.

Anglo-US planes have flown repeatedly over the Lake Yerevan area, and its installations must have been the subject of careful air mapping. US experts believe that the USSR has set up an important part of its experimental plants here, particularly a supercyclotron housed in a vast steel dome, similar to but not ranking with the one at Berkeley University.

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Quest for Extraplanetary Satellite

One of the Soviet Union's most important stations for the observation of natural phenomena of radioactivity and cosmic radiation at high altitudes is located near the port installations of Sochi, on the Black Sea. This station is under the direction of the atomic scientist Terletskiy. Military experts in Tehran and Ankara agree that this station has about 50 stratospheric aircraft built on the pattern of German and British planes. These "flying laboratories," which are said to have a ceiling averaging 23,000 eters, are supposed to be equipped with extremely powerful helicopter engines which enable them to remain almost motionless in mid-air for precision experiments.

Soviet physicists have flown in these craft since last year in quest of new information concerning the kappa mesons, believed to come from the sun or from supernovae, or to have originated in the beginning of the world. The main aim of the Sochi engineers is to perfect an artificial atomic extraplanetary satellite, with or without a pilot. The best test pilots would be recruited from among the people of northern Tibet, who are used to living in a glacial atmosphere, deficient in oxygen.

In this field the Soviets are said to have achieved the greatest progress, with the collaboration of three members of the former team of Professor Werner von Braun, inventor of the V-2 rocket and former director of the secret aeronautical plants at Peenemuende. Toward the end of World War II, Von Braun and his Luftwaffe specialists were on the verge of making a space platform to focus "death rays" on the Allies by means of a vast concave mirror. Dr Rudolph Hermann, von Braun's principal assistant, told me in March 1953, while on vacation in the Cannes area of France, that several von Braun type space rockets were under construction in Colorado, US, and would be completed in October [1953].

The Sochi experimental rockets are said to weigh 22 tons and to have a 2,500-kilometer radius of operation. During the past few months, they are said to have been tested with much greater frequency above the Black Sea and in the Crimean Peninsula, carrying mice which safely endured an acceleration of 58 meters per second [sic].

There is a branch of the Sochi station at Arshin, Armenia, which reports directly to the Yerevan center. But the Sochi and Arshin stations are subordinate to a single headquarters at Krasnaya-Polyana, about 60 kilometers from Sochi, which is the nerve center of all the meteorological stations in the southern USSR; these stations are now estimated to number 180, and all are radar-equipped.

Construction of the Krasnaya-Polyana laboratories, according to reports from Rumania and Poland, began in the spring of 1950; 5,000 people, two thirds of them political prisoners, were employed on the construction. [Aubonne refers to 200 large internment camps near Sochi -- at Kherson, at Novorossiysk, in Rumania, in the Ukraine, near Sinovievsk, and at Magnitogorsk. He also quotes Zygmunt Nagorski with reference to Americans being held in USSR camps, and mentions the forced transfer of Jews to the Birobidzhan ASSR in 1951.]

The administrative organization in charge of the strategic installations in the southern territories of the USSR is analogous to "Glavsevmorput'" (Main Administration of the Northern Sea Route). "Glavsevmorput'" has organized more than 400 polar expeditions, built a long string of maritime bases between Norway and Spitzbergen, started the exploitation of coal and of rare mineral and oil resources, and installed gigantic refineries. Forced labor is being employed in five or six large-scale enterprises devoted to the construction of extremely strong air-naval bases around the coasts of the USSR and its Satellites, for the protection of Soviet nuclear plants.

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Semenov's Testing Centers and the Chinese Nuclear Plants

Since spring 1952, there have been two other experimental centers, one in the Chuguchak region of Outer Mongolia and one in the Lyakhov Islands in the Laptev (Nordenskjold) Sea. Soviet engineers, including Nikolay Semenov, direct the work, utilizing deported technicians. In these laboratories the aeronautics specialists gear their work to that of their atom colleagues. Here, as in Sochi, the best engineers from Peenemuende have contributed most of the Third Reich's secret plans on guided missiles. Except for Professor von Braun and a few of his deputies, as well as Professor Hermann Oberth, who is reportedly working for the Italian government in the La Spezia laboratories, the West got only a minority of Hitler's astronautical pioneers. The MIG-15, for instance, has been found to be Sergey Ilyushin's adaptation of German designs [sic].

In Chuguchak and the Lyakhov Islands the main activity is reported to be the second part of the Krasnaya-Polyana experiments, consisting of equipping the rocket prototypes with propulsion systems based on nuclear energy, and of providing the rockets with atomic charges. Similar tests are said to have taken place since the winter of 1952 on the semidesert high plateaus of Chinese Turkestan, an area which is rich in second-grade uranium deposits, tungsten, iron, and coal. In that area the Chinese Communists have set up a relatively important nuclear research plant near the headwaters of the Tarim River. Reports coming from the capital of Sinkiang Province indicate that small atomic charges have been tested at this plant and the manufacture of the corresponding type of weapons is envisaged.

On 17 April 1953, the British journalist Kenneth de Courcy reported that on 4 March the USSR had sent to Communist China an atom bomb and 120 Il-28 twin-jet light bombers, "able to carry nuclear charges." He added that the bomb was taken to the Kamassu air base and placed under the custody of Chinese guards and several Soviet technicians.

Artificial Radioactive Elements Made at Balkhash

According to reports from US sources, the Tarim, Kamassu, and Mongolian centers are compartmented, like an espionage network. However, there are coordination laboratories, located in the Kuznetsk Basin towns of Tashmagol and Temir-Tau, and at Balkhash, on the northern shore of Lake Balkhash in the Kazakh SSR. Semiofficial US reports say that the Soviet atomic weapons are actually made in these areas and then studied for adaptation to the aircraft and supersonic rockets made in other cities of the USSR, particularly in the great center of Poveresjo [?], north of Moscow, and in Tomsk, western Siberia.

Most of the Western intelligence services agree that Balkhash is the site of the great "factories of artifical radioelements," which seek to substitute thorium and sulfur for uranium-235 and 239. Soviet physicists are said to believe that the latest methods of nuclear fission will enable them in the future to reduce largely the consumption of uranium by means of chain reactions, thus avoiding the too-rapid exhaustion of the deposits in the Satellite countries, especially those of Zaietsar, Bulgaria. They are said to have at least two uranium atomic piles at Balkhash. There is no doubt that the Balkhash factories have given the Soviet scientists the secret of the most diverse atomic weapons, including A-bombs larger than those tested in September 1949.

It is difficult to obtain precise information on Soviet supplies of atomic raw materials, except perhaps the very rich but not deep deposits in Yugoslavia [sic] between the Morava and Ibar rivers, and those in Bulgaria. The most substantial discoveries of ores of uranium, plutonium, niobium, and their by-products are said to have been made mainly in the northern portion of the Ural Mountains, in "Nouvelle Siberie" [Novosibirskiye Ostrova?], and near Cape Chelyuskin, as well as in northwestern Manchuria within the great loop of the Amur River.

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Sakhalin, Ruhr of the Far East

Regardless of President Eisenhower's nonrecognition of Soviet sovereignty over the Kuriles and the southern portion of Sakhalin Island, Moscow is not going to give up the latter. Sakhalin is becoming the Ruhr of the Far East, with its estimated 4 billion tons of coal around the area of Aleksandrovsk alone and the forest of oil derricks at its northern end. The industrial production of Sakhalin Island, Manchuria, and eastern Siberia has doubled since 1945 and is now 40 percent of the Soviet Union's total industrial production, whereas the production of the European USSR has increased by only 20 percent.

If the USSR were to lose these sources of supply, it would have to transport oil products from the Caucasus, a practical impossibility in view of the extreme vulnerability of the Trans-Siberian Railroad. So the Soviet engineers and German specialists have undertaken the construction of a 15-kilometer submarine tunnel to provide a railroad link between the port of Pogobi, on the western coast of Sakhalin Island, and Komarovka, in eastern Siberia.

In Khabarovsk, aerial photographs have shown launching ramps, probably provided with "special" rockets from the Yablonoy atomic depots, and from Lake Baykal, Irkutsk, and Krasnoyarsk.

The Soviet naval forces in the Pacific, concentrated in the Seas of Okhotsk and Japan, and on the Amur River, are said to comprise about 100 submarines, eighteen 1,600-ton destroyers, and more than 350 landing barges. Large air forces have appeared since last autumn over almost all of eastern Siberia, under the command of a single headquarters in Chukotskiy, opposite Alaska, which has 50,000 men organized in 15 divisions, as follows: six armored, six infantry, two polar, and one airborne.

The World's Second Navy

The USSR owes its new, powerful naval units to German engineers. New-type cruisers have been seen on the Black Sea and the Baltic, and six of them are reportedly being finished at Kronstadt. They are reported to be 15,000-ton ships armed with twelve 150-millimeter guns, and capable of a speed and range of operation much superior to those of British units of the same type. The cruiser Sverdlov, one of the prototypes to which German naval experts have contributed revolutionary developments, displaces 10,000 tons at 35 knots, and is armed with 12 six-inch guns on three gun mounts.

/Aubonne refers to the 16 March 1953 report to the House of Commons by J. P. L. Thoma, British First Lord of the Admiralty, regarding Soviet naval power, and to the task assigned by Stalin in 1951 to Navy Minister Yumashev: to keep control of the Baltic-Atlantic passage and of Arctic sea lanes, and to seek progressive submarine control of the Mediterranean. He quotes US reports on Soviet naval strength in the Arctic Ocean, consisting of the battleships Sovetskaya Belorussiya and Strana Sovetov and units of other categories, the main home base being Molotovsk, with secondary navy yards at Arkhangel'sk, Belomorsk, and Murmansk. The vital parts of the new vessels under construction are tested on inland waters, especially on Lakes Balkhash and Baykal, where, since autumn 1952, construction tests on atomic-reactor submarines have reportedly been going on./

Tiksi, Pivot of the Polar Front

Early in 1953 the Soviets decreed that the Seas of Kara, Laptev, eastern Siberia, and Chukot were to be considered Soviet seas. Pending similar decisions concerning the Baltic Sea, the White Sea, and particularly the Black Sea, Soviet

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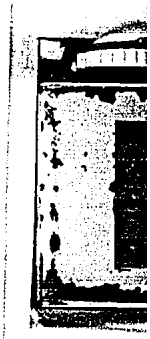

strategists have extended their air-base works of the Great North to Dickinson /Dikson?/ and Ayon islands, Franz Josef Land (which nominally belongs to Austria), the Novaya Zemlya archipelago; and Vorkuta and Tiksi, two mushrooming towns which now have more than 140,000 inhabitants. They are connected by a whole series of landing strips on the islands of Vrangel'ya, Ust'-Ya, Ust'-Mata, etc., and by a railroad network fanning out from Ketals /Kotlas?/ to Arkhangel'sk, Mezen', and Vorkuta.

Tiksi, pivot of the Soviet polar front, has heavy air squadrons with a range at least as great as that of squadrons at Thule, Pittsburgh, Cleveland, Detroit, or Chicago.

The total area of the Tiksi base, built against the wall of the polar cap itself, is estimated to be about 20,000 hectares, and the total length of its take-off and landing strips is said to be 50 kilometers. Giant hangars have been built for the housing and repair of aircraft of all types. Most of the explosives and fuels are stored on the ice. More than 6,000 workers, many of them political prisoners, are said to have taken part in building the base. /This paragraph appears in the 25 August issue of La Cote d'Ivoire only./

TU-75, Strategic Craft No 1

The TU-75, originally named TU-4, is equipped with six M-028 turboprops derived from the BMW-028, itself derived from the German axial K-018 turbojet. It weighs 160 tons, measures 81 meters in length and 68 meters in wing span, and has a cruising speed of about 730 kilometers per hour and a bombing altitude of 16,500 meters. Only the outside wing fuel tanks are armored; exhaust gases from the engines replace the fuel in the tanks as it is used in order to prevent fire from direct hits. Each turboprop /according to the 25 August issue of La Cote d'Ivoire/ drives two counterrotating, four-blade propellers mounted on a housing which contains the reduction gear and the pitch-change device, and the blades are kept ice-free by hot exhaust gases.

According to Swiss sources, in February 1953, the Soviet Air Force was estimated to have 750 TUG-75s in operating condition; 20,000 supersonic rockets, one third of them remote-controlled; 500 supersonic ramjet fighters designed to fly 60 hours; and 45,000 aircraft of all types, including 30,000 very fast interceptors.

GIL-01 Atomic Craft; G2-2-B Jet Fighter

Recently, the Royal Air Force Review described the GIL-01, the first Soviet atom-powered aircraft. In Geneva, I /Aubonne/ obtained information which concurred with the RAF magazine, except that the reactor's thrust was said to be less than the 50,000 kilograms mentioned in the British report, and that the anti-radiation insulation invented by Professor Pontecorvo was said to be "relatively heavy but very manageable." The performance of the GIL-01 is said to be similar to that of the Douglas Skyrocket.

According to reports obtained in Sweden and published partially in London, the USSR has also made in Kuybyshev the G2-2-B, a delta-wing jet fighter which can climb vertically by means of a tripod consisting of three rocket tubes. The pilot would land the craft by using a set of parachutes and, near the ground, setting the jets into operation. The G2-2-B is said to be intended mainly to intercept heavy bombers and "to carry atomic charges from the bridge of warships."

The Soviet H-Bomb

/This survey was written before Pravda announced the explosion of a Soviet H-bomb./

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US intelligence chiefs -- somewhat more optimistic than Dr Hans A Bethe, who wondered early in 1953 whether the USSR had not exploded an H-bomb prior to the Eniwetok test in November 1952 -- believe the "Red Lulu" will not be ready before the beginning of 1954. Observers in Geneva and Stockholm set the date within "the very next few months."

The 1,000 or so nuclear bombs with which the Pentagon chiefs have equipped the Strategic Air Command in Omaha are evidence of their awareness of the possibility of an atomic Pearl Harbor and of their estimate of the potential of the USSR -- whether the latter has the H-bomb with or without detonator, or has only 300 A-bombs, as US experts believe.

The question is whether the NATO nations are well informed on the present prospects, and whether the defense strategy of Europe, faced with 155 Soviet and Satellite divisions ready for action, is not upset by the situation. Actually, the equilibrium of forces is maintained only by a psychological factor: the US lead would certainly give the West a feeling of relative security in the event of war, but obviously Moscow is trying by all means to build up a reserve of atomic weapons sufficient to impress the Pentagon and persuade it not to use its own.

My conclusion will be a fervent hope: that the US will promptly inform its allies about Moscow's real strength, and that it will always maintain its technical and numerical superiority so that it can, if need be, retaliate on the aggressor with a lightning counterattack to annihilate its entire atomic network.

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